Claims

1. A flexible ocular device for implantation into the eye formed of a biocompatible elastomeric material, foldable to a diameter of 1.5 mm or less, comprising a fluid drainage tube having at one end a foldable plate adapted to locate the device on the inner surface of the sclera in a suprachoroidal space formed by cyclodialysis, said drainage tube opening onto the disc at one end and opening to the anterior chamber when implanted into the eye at its other end, so as to provide aqueous pressure regulation.

2. A device according to claim 1 wherein said fluid drainage tube has a diameter selected to provide predetermined resistance to aqueous flow.

3. A device according to claim 2 wherein said predetermined resistance is at a pressure of 10 mm Hg or less.

4. A device according to claim 1 wherein said tube contains a valve so as to regulate pressure of the aqueous at a predetermined level.

5. A device according to claim 4 wherein said predetermined level is a pressure of 10 mm Hg or less.

6. A device according to claim 1 wherein said plate has a diameter from 0.05 to 6 mm and a thickness from 12.5 μ to 250 μ.

7. A device according to claim 1 wherein said tube has a length from 1 mm to 4 mm.

8. A device according to claim 1 wherein said tube comprises an outer diameter of 400-1000 μ and an inner diameter from 50 to 500 μ.

9. A device according to claim 4 wherein said valve comprises a slit valve.

10. A method for treating glaucoma which comprises:

providing a flexible ocular device formed of a biocompatible elastomeric material foldable to a diameter of 1.5 mm or less, comprising a fluid drainage tube having at one end a foldable plate adapted to locate the device on the inner surface of the sclera and at its other end being open so as to allow fluid communication through said tube;

forming a small self-sealing incision at the juncture of the cornea and sclera of the eye opening into the anterior chamber;

filling the anterior chamber with a viscoelastic substance;

introducing the foldable ocular device into a suprachoroidal space formed by cyclodialysis via a hollow cannula, wherein said plate locates the device on the inner surface of the sclera in the suprachoroidal space, and said drainage tube is located in the anterior chamber of the eye so as to provide aqueous humor pressure regulation; and

thereafter removing said cannula and viscoelastic material from the eye.

11. A method according to claim 10 wherein said fluid drainage tube has a diameter selected to provide predetermined resistance to aqueous flow.

12. A method according to claim 10 wherein wherein said predetermined resistance is at a pressure of 10 mm Hg or less.

13. A method according to claim 10 wherein said tube contains a valve so as to regulate pressure of the aqueous at a predetermined level.

14. A method according to claim 13 wherein said predetermined level is a pressure of 10 mm Hg or less.

15. A device according to claim 10 wherein said plate has a diameter from 0.05 to 6 mm and a thickness from 12.5 μ to 250 μ.

16. A method according to claim 10 wherein said tube has a length from 1 mm to 4 mm.

17. A method according to claim 10 wherein said tube comprises an outer diameter of 400-1000 μ and an inner diameter from 50 to 500 μ.

18. A method according to claim 13 wherein said valve comprises a slit valve.

19. An ocular pressure spike shunt for insertion into an ocular paracentesis incision port following ocular surgery, comprising a flexible fluid transfer tube formed of biocompatible material, preferably biocompatible elastomeric material, so as to allow paracentesis incision closure around said tube, having an inner end and an outer end, a tubular lumen disposed between said inner end and said outer end to allow fluid communication through said tube, said lumen containing a valve for controlling pressure in the eye following ocular surgery, which valve opens permitting fluid flow through said tube when a predetermined pressure is exceeded, said shunt being configured such that on insertion into a paracentesis port said outer end is substantially flush with the surface of the cornea, and said inner end opens into the anterior chamber of the eye.

20. A shunt according to claim 19 wherein said predetermined pressure is 10 mm Hg.

21. A method for preventing ocular pressure spikes following ocular surgery wherein a paracentesis incision port is formed in the eye during said surgery, comprising introducing an ocular pressure spike shunt into said paracentesis port at the conclusion of ocular surgery, said shunt comprising a flexible fluid transfer tube formed of biocompatible material, preferably biocompatible elastomeric material, so as to allow paracentesis incision closure around said tube, having an inner end and an outer end, a tubular lumen disposed between said inner end and said outer end to allow fluid communication through said tube, said lumen containing a valve

for controlling pressure in the eye following ocular surgery, which valve opens permitting fluid flow through said tube when a predetermined pressure is exceeded, said shunt being configured such that on insertion into a paracentesis port said outer end is substantially flush with the surface of the cornea, and said inner end extends into the anterior chamber of the eye.